

In re Patent Application of:
VINSON ET AL.
Serial No. 10/696,918
Filing Date: October 30, 2003

In the Claims:

Claims 1-9 (CANCELLED)

10. (CURRENTLY AMENDED) An integrated circuit chip module comprising:

a substrate;

an integrated circuit die mounted on the substrate and having die pads and an exposed surface opposite from the substrate;

a plurality of substrate bonding pads positioned on the substrate adjacent the integrated circuit die; and

a plurality of decoupling capacitor assembly assemblies mounted on the integrated circuit die, ~~said~~ each decoupling capacitor assembly comprising

a capacitor carrier secured onto the exposed surface of the integrated circuit die,

a decoupling capacitor carried by said capacitor carrier;

a thin film metallization layer positioned on said capacitor carrier; and

a conductive adhesive layer engaging said decoupling capacitor and thin film metallization layer and securing said

decoupling capacitor to said capacitor carrier;

a wire bond extending from the thin film metallization layer to a logic pin of the integrated circuit die and from a logic pin to a substrate bonding pad.

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Claim 11 (CANCELLED)

12. (CURRENTLY AMENDED) An integrated circuit chip module according to ~~Claim 11~~ Claim 10, wherein said plurality of decoupling capacitors are mounted in series along said integrated circuit die.

13. (ORIGINAL) An integrated circuit chip module according to Claim 10, and further comprising an adhesive securing said decoupling capacitor to said capacitor carrier.

14. (ORIGINAL) An integrated circuit chip module according to Claim 10, and further comprising an adhesive securing said decoupling capacitor assembly to said integrated circuit die.

15. (ORIGINAL) An integrated circuit chip module according to Claim 10, wherein said capacitor carrier is formed from an aluminum nitride substrate.

16. (ORIGINAL) An integrated circuit chip module according to Claim 15, wherein said aluminum nitride substrate ranges in thickness from about 5 mil to about 50 mil.

17. (ORIGINAL) An integrated circuit chip module according to Claim 10, wherein a wire bond extends from said capacitor to a logic pin of said integrated circuit die.

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18. (ORIGINAL) An integrated circuit chip module according to Claim 10, and including a bonding pad on said thin film metallization layer for securing a wire bond.

Claims 19-27 (CANCELLED)

28. (CURRENTLY AMENDED) A decoupling capacitor assembly used for decoupling integrated circuit die comprising:

a capacitor carrier formed as an aluminum nitride substrate that is about 5 mil to about 50 mil thickness;
a decoupling capacitor carried by said capacitor carrier;
an adhesive securing said decoupling capacitor to said capacitor carrier; ~~and~~

a thin film metallization layer formed on the capacitor carrier, wherein said adhesive comprises a conductive adhesive for conducting current between said capacitor and said capacitor carrier; and

a wire bond extending from said decoupling capacitor and adapted to be connected to a logic pin of an integrated circuit die.

Claim 29 (CANCELLED)

30. (CURRENTLY AMENDED) A decoupling capacitor assembly according to Claim 28, and further comprising a bonding pad positioned on said capacitor carrier for connecting ~~a wire~~ the wire bond thereto.

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Claims 31-37 (CANCELLED)

38. (CURRENTLY AMENDED) An integrated circuit chip module comprising:

a substrate;

an integrated circuit die mounted on the substrate and having die pads and an exposed surface opposite from the substrate;

a plurality of substrate bonding pads positioned on the substrate adjacent the integrated circuit die; and

a plurality of decoupling capacitor assembly assemblies mounted on each integrated circuit die, ~~said~~ each decoupling capacitor assembly comprising

a capacitor carrier secured onto the exposed surface of the integrated circuit die, and

a decoupling capacitor carried by the capacitor carrier;

a wire bond extending from the decoupling capacitor assembly to a die pad and from a die pad to a substrate bonding pad; and

a wire bond extending from said capacitor carrier to a logic pin of said integrated circuit die.